

NAME \_\_\_\_\_ DATE \_\_\_\_\_ SCORE \_\_\_\_\_

*Circles; Parabolas*

Find an equation of the circle with the given center and radius.

1. (0, 0), 5 \_\_\_\_\_

2. (1, 1), 3 \_\_\_\_\_

3. (-1, -2), 2 \_\_\_\_\_

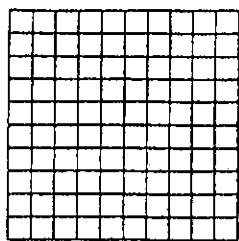
4. (2, 3),  $\frac{1}{2}$  \_\_\_\_\_

5. (3, 5),  $\sqrt{3}$  \_\_\_\_\_

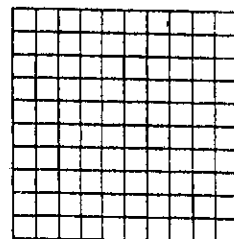
6. (-5, -2),  $3\sqrt{2}$  \_\_\_\_\_

Graph each equation.

7.  $x^2 + y^2 = 16$



8.  $(x + 1)^2 + y^2 = 4$



If the given equation has a circle as its graph, find the center and radius. If the equation has no graph, so state.

9.  $x^2 + y^2 - 4y - 12 = 0$  \_\_\_\_\_

10.  $x^2 + y^2 - 6x + 4y - 12 = 0$  \_\_\_\_\_

11.  $x^2 + y^2 - 2x - 2y + 6 = 0$  \_\_\_\_\_

12.  $x^2 + y^2 - x - 3y + \frac{39}{16} = 0$  \_\_\_\_\_

Find an equation of the parabola described.

13. Focus (1, 0); directrix  $x = -3$  \_\_\_\_\_

14. Focus (1, 3); directrix  $y = 1$  \_\_\_\_\_

15. Focus (0, -3); vertex (2, -3) \_\_\_\_\_

16. Focus (-2, 3); vertex (-2, 7) \_\_\_\_\_

17. Vertex (5, 1); directrix  $x = 3$  \_\_\_\_\_

18. Vertex (3, -2); directrix  $y = -4$  \_\_\_\_\_

Find the vertex, focus, directrix, and axis of symmetry of each parabola. Then graph the parabola.

19.  $4y = x^2 - 4x$

---



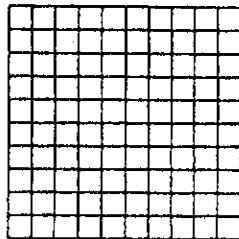
---



---



---



20.  $y^2 + 2y + 8x - 15 = 0$

---



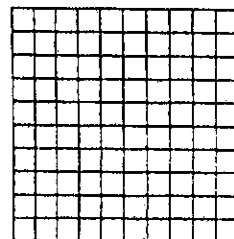
---



---



---



Find the midpoint of the following segments given the endpoints.

1.  $(-4, -3)$   $(2, 1)$

2.  $(8, 5)$   $(-3, 1)$

Given  $\overline{AB}$  is a segment and M is the midpoint. Find the coordinates of B.

3.  $A(-5, 8)$   $M(2, 6)$

4.  $A(0, 7)$   $M(3.5, -2)$

---

5. Given  $\triangle ABC$   $A(4, -5)$   $B(-2, -8)$   $C(-8, 4)$ . Find the length of the median from B to AC.

6. Find the length of the median from A to  $\overline{BC}$ .